STERILIZATION OF POTABLE WATER LINES AND TANKS

ITEM 1700

WORK INCLUDED: (Sec. 01) Furnish all materials and equipment necessary to sterilize potable water lines and/or water tanks as specified herein.

REFERENCE ITEMS: (Sec.02) Applicable portions of the latest revision of the following specification shall be included as a part of this specification.

AWWA American Water Works Association

DESCRIPTION: (Sec.03) The sterilization of potable water lines and potable water storage tanks shall have the following designation:

Item 1700A - Sterilization of Potable Water Lines
Item 1700B - Sterilization of Potable Water Storage Tanks (Steel)
Item 1700C - Sterilization of Potable Water Storage Tanks (Concrete)

The Owner will furnish water for initial chlorination. If rechlorination is required the Contractor shall pay the Owner for additional water used at the current rate.

STERILIZATION OF POTABLE WATER LINES: Item 1700A (Sec.04) The method to be used for sterilization shall comply with AWWA C 601, C 651, and the State of Ohio, Department of Health requirements. Use Sec. 5.2, Continuous Feed Method unless other methods are approved by the Owner and the Engineer.

At the time of construction place calcium hypochlorite granules in the pipeline at the upstream end of the first section of pipe, at each branch main and at 500 foot intervals in accordance with Table 1 of AWWA C 601.

TABLE 1

Ounces of Calcium Hypochlorite Granules
To Be Placed At Beginning of Main
and at Each 500-ft Interval

Pipe Diameter in.	Calcium Hypochlorite Granules oz.
4	0.5
6	1.0
8	2.0
12	4.0
16 and Larger	8.0

After the water line or portion thereof is complete and pressure tested, carefully and thoroughly flush the lines with potable water from sources approved by the Resident Representative. The Contractor shall furnish potable water for flushing if no approved source is obtainable from the Owner.

Upon completion of the flushing operation, sterilize the lines using chlorine solution feed machine or other approved equipment to place a hypochlorite solution into the water line and service lines as far as the curb stops. Introduce sufficient chlorine into the lines to produce a chlorine residual of not less than 25 mg/1. Retain this residual in the lines for not less than 24 hours. At the end of the holding period remove the chlorinated water, thoroughly flush the lines and fill with potable water from the distribution system.

Testing: Collect and test water samples from the newly sterilized lines in accordance with the latest edition of standard methods of Examination of Water and Wastewater, for three days for any evidence of contamination. The bacteriological testing of the samples will be arranged and paid for by the Owner.

In the event that the tests show the need for rechlorination, repeat the sterilization procedure as often as may be necessary until satisfactory results are obtained. No additional charge will be approved for rechlorination requirements.

STERILIZATION OF POTABLE WATER STORAGE TANKS (STEEL), Item 1700B, CONCRETE) ITEM 1700C: (Sec.05) After the testing of the storage facility for leaks has been satisfactorily completed and the inside coating applied, if coating is called for, disinfect the tank and riser (if applicable). Allow at least 24 hours, but not less than paint manufacturer's recommendation, for the coating to dry before disinfection.

Disinfection procedure shall conform to AWWA D 105 and the State of Ohio, Department of Health requirements.

The forms of chlorine which may be used in the disinfecting operations are liquid chlorine, sodium hypochlorite solution and calcium hypochlorite granules or tablets.

The following three methods of chlorination are acceptable :

Method No. 1: Fill storage facility to overflow level with potable water to which enough chlorine has been added to provide a free chlorine residual of not less than 10 mg/1 after six hours if the water has been uniformly chlorinated by gas feed or chemical pump, or 24 hours if chlorinated by sodium hypochlorite or calcium hypochlorite. Drain to waste and refill with potable water and test as specified herein after.

Method No. 2: Apply a solution of 200 mg/1 available chlorine directly to all parts of the storage facility which will be in contact with water when the storage facility is filled to overflow elevation.

The chlorine solution may be applied with suitable brushes or with spray equipment. The solution shall thoroughly coat all surfaces including inlet and outlet piping. Apply to separate drain piping such that when filled, available chlorine shall not be less than 10 mg/1.

Surfaces disinfected shall remain in contact with the strong chlorine solution for at least 30 minutes. Purge drain pipe and fill storage facility to overflow. After successful testing the water may be released to the distribution system.

Method No.3: Add water and chlorine to the storage facility in amounts to provide 50 mg/1 available chlorine when filled to 5% storage volume. Hold in storage facility for not less than six hours. Finish filling to piping. After successful testing water may be released to the distribution system.

Testing: Before the tank is placed in operation, the Contractor shall collect and have tested samples of water therefrom in accordance with the latest edition of Standard Methods of Examination of Water and Waste Water, and secure approval of the State of Ohio Department of Health. The Owner will make the necessary arrangements, transport samples and pay for the bacteriological testing.

In the event that the tests show the need for rechlorination, repeat the sterilization procedure as often as may be necessary until satisfactory results are obtained. No additional charge will be approved for rechlorination requirements.

Method of Payment (Sec. 06) No separate payment will be made.